



**Avian MK3 Series User Manual**

# Avian Series Integrated Amplifiers MK3

## User Manual

Nighthawk Blackhawk Osprey



Nighthawk MK3 and Remote Control pictured. This is the entry model in the Avian series. Its physical size, layout, and tube compliment are exactly the same as the Blackhawk and Osprey. Its case is coated in space grey and the Blackhawk and Osprey are black. The output power is the same as the Blackhawk but the Blackhawk has an enhanced pre-amp section with upgraded audiophile components for added detail and dynamics. The Osprey incorporates the same upgraded pre-amp section but is fifty percent more powerful.

# CONGRATULATIONS!

**You have just purchased one of the finest Integrated Tube Amplifiers in the world! Welcome to the Raven Audio family!**

Before setting up and using your new vacuum tube amplifier, please read this manual carefully as it will inform you of the product specifications, proper installation, and correct operating procedures. Also, included in this manual are guidelines on how to service and care for your new Raven Audio product.

## GETTING STARTED

### UNBOXING

This section describes the unpacking and installation procedures for your new component. Unpacking all approved Raven Audio shipping containers is very simple. Your unit has been shipped in a specially designed shipping box in order to protect its contents, and special care has been taken to prevent damage under normal shipping conditions.

### REMOVING YOUR NEW AUDIO COMPONENT FROM ITS SHIPPING BOX

Carefully remove your new component from its shipping box, and examine it closely for signs of shipping damage. You must save all of the original shipping box and padding to protect your amplifier from damage should you wish to store it, ship it for service and upgrades, or for resale.

### POSSIBLE SHIPPING DAMAGE OR MISHAPS

If damage is evident upon inspection of the shipping container, TAKE IMMEDIATE CARE NOT TO DESTROY EVIDENCE OF DAMAGE OR THE DAMAGED CONTAINER! It is imperative that you immediately document any damage by taking clear well lit pictures. Contact Raven Audio and email the pictures to [info@ravenaudio.com](mailto:info@ravenaudio.com) and your order number.

## SPECIFICATIONS

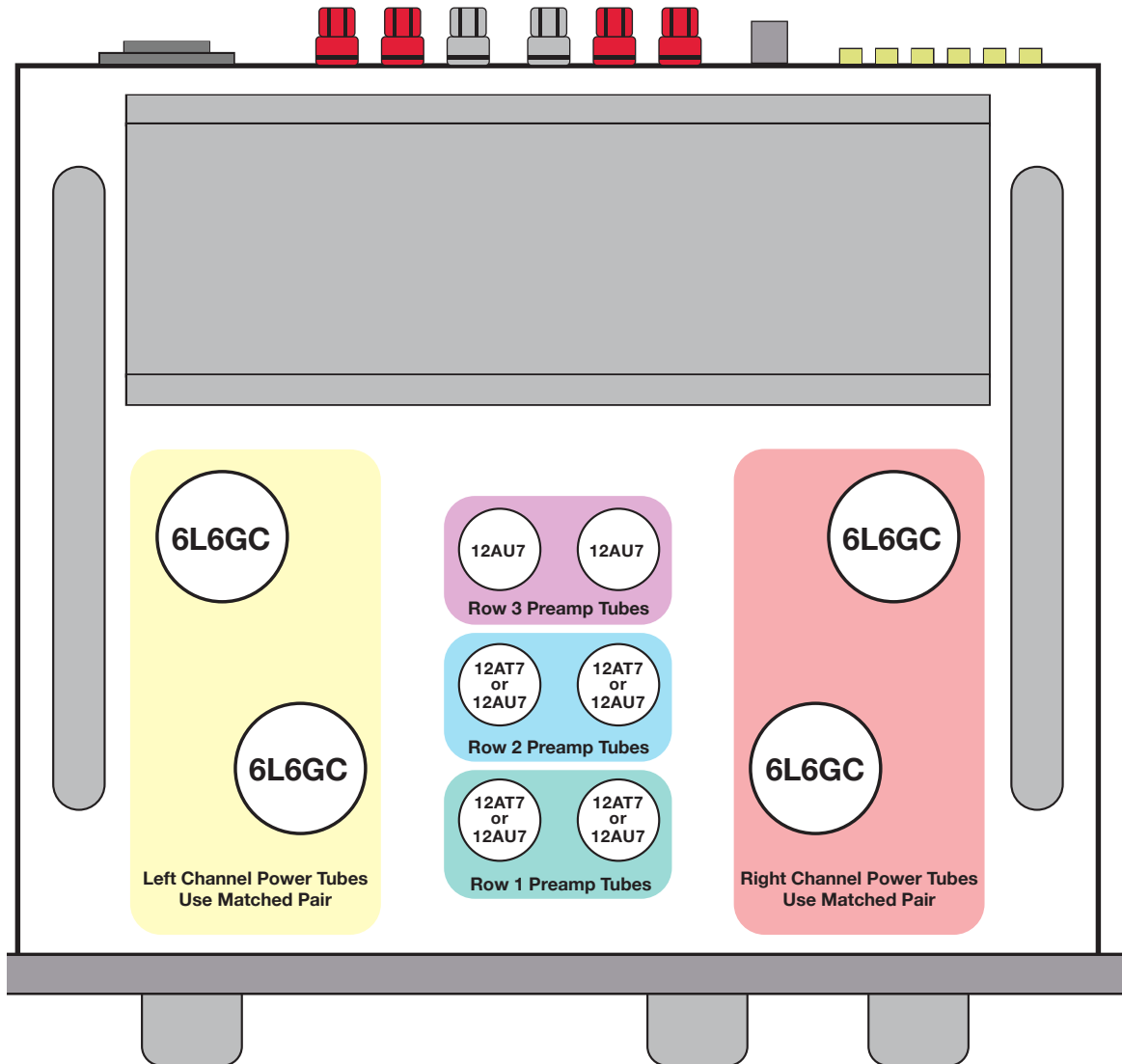
### **Nighthawk and Blackhawk**

CIRCUIT TYPE Push-Pull Ultra-linear  
Self-biasing (never needs adjustment)  
20 watts per channel: (8Ω, 1% THD)  
Frequency Response: 20Hz-20kHz +/- .3 dB  
THD: < 0.1% @ 1W < 1.5% @ Rated Power  
S/N Ratio 90 dB, 100 dBA  
Inputs: 5 stereo RCA  
Outputs: 4 & 8 Ω and RCA Stereo Subwoofer  
Power Consumption: 290 watts  
Dimensions: W 15.5" x D 14" x H 6.5"  
Weight: 31 lbs

### **Osprey**

CIRCUIT TYPE Push-Pull Ultra-linear  
Auto-biasing (Typically does not need adjustment)  
30 watts per channel: (8Ω, 1% THD) Osprey  
Frequency Response: 20Hz-20kHz +/- .3dB  
THD: < 0.1% @ 1W < 1.5% @ Rated Power  
S/N Ratio 90 dB, 100 dBA  
Inputs: 5 stereo RCA  
Outputs: 4 & 8 Ω and RCA Stereo Subwoofer  
Power Consumption: 320 watts  
Dimensions: W 15.5" x D 14" x H 6.5"  
Weight: 33 lbs

# OPERATION



## INSERTING TUBES / TUBE ROLLING

Keep power tubes in matched pairs! You will have two matched pairs shipped with the amp. One matched pair goes in the left channel power tube section shown above in yellow. The other pair goes in the right channel power section shown above in red. Use care when inserting and removing each tube. Do not rock them sideways, it can crack the post on the tube. Make sure the guide ridge on the post is aligned with the indentation on the socket when inserting a power tube.

## ROW 1 AND 2 PREAMP TUBES

12AT7 or 12AU7 tubes can be used. Raven Audio recommends using 12AT7 tubes unless your speakers are extremely sensitive such as 95 db or above. However, 12AT7 tubes may still sound better. Use matched pairs within each row. Row 1 (light green) is the preamplifier stage and the brand tube used here has the greatest impact on sound. Row 2 (light blue) is the phase inverter stage and the brand tube used also has impact on the overall sound.

**ROW 3 PREAMP TUBES** (phase inverter/driver) (purple section)  
12AU7 tubes must always be used in this row. Use matched pair.

## BREAK-IN PERIOD

All new Raven Audio amplifiers should go through a short break-in period in order to give the new components inside time to break in. This especially includes the capacitors and resistors. New tubes are better after a few days of running too. The different metal components start to move in a quieter and more efficient way as they expand and contract while heating and cooling.

## INTRODUCTION/BIASING NOTES

The Avian Series Integrated Stereo Amplifiers use output tubes that are configured in push-pull ultra-linear which yields 20 to 30 watts per channel of high current power. The Nighthawk and Blackhawk are self-biasing, and the Osprey is fully auto-biasing. Therefore, the user doesn't have to constantly monitor the balance and biasing of the tubes.

## INPUTS

Signal input from a separate source component or audio input connection is made via the input jacks on the rear panel of the Raven Audio amplifier. The interconnect cables from the output of a phono preamp, DAC, CD player, etc. can be any convenient length that your system requires. The choice of a high-quality interconnect cable is very important, and Raven Audio sells some of the best quality value-priced cables in the world.



## SPEAKER OUTPUTS

The binding posts on the rear panel are 4 and 8 OHM and should be matched to your speaker's individual specifications. However, you can run 8 OHM speakers on the 4 OHM tap and see if you like the sound better. If you have a question as to the proper impedance, please contact Raven Audio. We will be glad to help you.

Make sure that you match the left and right channels of the amplifier and the speakers! If your system sounds flat and lifeless, or the vocals and lead instruments are not in the center stage between your speakers – you may have accidentally reversed the positive and negative wires on one of the speaker cables. It's an easy mistake to make, yet easy to remedy. Just keep the red with red (+) and black with black (-).

## HIGH PASS CROSSOVER/SUBWOOFER OUTPUT

On the rear panel of the amplifier, you will find a selector switch that offers three settings. On bypass, the amplifier operates in a normal fashion like every other amplifier. When you choose to operate your new Raven Audio Avian Series Integrated Stereo Amplifier with a subwoofer, you have the option of using our 80Hz & 100Hz bass filter. When using this filter, the corresponding bass frequencies are removed from the amplifier section and effectively make the amp 2 to 3 times more powerful. This happens because the Avian's tube power amplifier section has been greatly relieved of reproducing bass. If you choose to use this option, the powered subwoofer will handle the bass load. Both the 80Hz and 100Hz settings have a gentle slope, and you will probably set the crossover on your subwoofer well beneath these numbers.

## REMOTE CONTROL



The Raven Audio Remote Control is used to adjust volume. When you press the upper button, you will see the volume control knob rotate clockwise. When you press the lower button, you will see the volume knob rotate counter clockwise and hear the volume decrease. Be careful when adjusting the volume not to turn the volume knob past the 10 o'clock position if there is no music playing, it may come in too loudly. The remote control has screws on the back that can be removed to replace the battery. It uses one CR 2025 battery.



CR 2025 Battery

## HEAT/PROPER VENTILATION/ADEQUATE SPACE

Position the unit away from all heat sources such as heater registers, stoves, kitchen appliances, or other heat producing components including preamplifiers, phono stages, or power amplifiers.

Blocking or covering the slots and openings in the top and bottom of the unit can create ventilation problems and cause overheating. In order to protect the component from overheating, never block these openings. Always allow at least four inches of clearance above the unit and two inches all around the unit for airflow. NEVER place the unit on a cloth, padded cushion, pillow, or any other layer that can block the bottom ventilation holes. The owner should always provide proper spacing around this product by placing it on an open rack with adequate ventilation. Do not place the amplifier in an enclosed rack. Heat buildup will shorten the lifetime of the tubes and the internal components.

# ELECTRICAL CONSIDERATIONS

## POWER SUPPLY

Operate the unit only from the power voltage indicated on the marking label on the back of the amplifier. Each unit is marked with the voltage it is set up for. This varies from country to country. In the United States, it is 110-120 volts.

## POWER CABLES

Arrange power supply cables so that they do not cross any areas that have foot traffic or are restricted and can become pinched or bent. Any items placed over or against power cables must not restrict, gouge, or cut them. Never use ungrounded or improperly built power cables or multiple supply boxes/strips!

## GROUNDING AND POLARIZATION

As a safety feature your product is equipped with a Type B, Class 1 American standard NEMA 5-15 plug. This plug will only fit into a properly designed power outlet. If you cannot insert the plug fully into the outlet, never try altering the plug. If the plug does not fit, you must contact a licensed electrician to update the obsolete outlet. NEVER defeat the grounding pin of the polarized plug.

You can purchase an electrical socket tester (3 wire receptacle tester) inexpensively from Home Depot or Lowe's. It will indicate whether you have an open ground or reversed polarity.

# TROUBLESHOOTING NOISE

Sometimes the grounding in older or improperly constructed homes can have wires with reversed polarities. Some have poor-quality grounds or non-grounded outlets. These situations will almost always cause line noise. Tube amplifiers are highly susceptible to line noise. The only proper way to create a situation that can defeat all line noise is to bring clean power all the way from the main power of your home, into your listening room and directly to the box that your amplifiers and especially preamplifiers and phono stages are plugged into. Nothing else is quite as good. This includes line scrubbers, power cleaners, and a myriad of expensive similar alternatives.

Raven Audio vacuum tube amplifiers are among the best amplifiers in the world when placed into a clean power situation. Contact Raven Audio for suggestions as to how to create the best electrical power setup for your new vacuum tube amplified products.

Peripheral products, especially those made overseas can be wired or even designed improperly and cause noise in your system. In many cases, they have grounding problems or create ground-loop problems. This is especially the case with vacuum tube phono stages, DACs, and preamplifiers. It is highly important to ground everything solidly.

## **POWER LINES/RADIO STATIONS/BIG-CITY INTERFERENCE**

Sometimes tube amplifiers pick up noise from overhead power lines and radio signals. This happens mostly when they are in close proximity. In large cities radio stations can interfere with high-quality audio systems. Usually these situations can be remedied easily, but it is important to know that normal interference can occur. Call Raven Audio to discuss this if you suspect you are experiencing interference.

Never overload power outlets when using any tube amplifier. It will impact performance severely. Before choosing the final system location, it is always best to prepare the power location to make sure it is adequate to support all of the devices that will make up your high-end audio system. If you have questions, call Raven Audio or a licensed electrician that is experienced and adept with wiring suitable for high-quality audio and entertainment systems. You may purchase an electrical outlet socket tester (3 wire receptacle tester) inexpensively from Home Depot or Lowe's Home Improvement. The tester will indicate whether you have an open ground or reversed polarity.

## **HOUSE WIRING**

Questions about home wiring, power supplies, and cables inside of walls should be referred to a licensed experience electrician ONLY.

## **TV Tuner Ground Loop**

If you have any type of TV tuner (Cable, Satellite, or Antenna) it should have its own grounding. This potentially causes a ground loop between its ground and the electrical ground. To test this, simply disconnect the tuner from it's signal cable and see if the noise goes away.

## **SERVICE/REPLACEMENT PARTS/UPGRADES**

Call Raven Audio if you wish to service or upgrade your Raven Audio product.

# SAFETY

## IMPORTANT SAFETY INSTRUCTIONS WARNING

To reduce the risk of electric shock, do not remove the cover. There are no user-serviceable parts inside; it is recommended that only qualified, certified electronics technicians service this unit.

### WARNING • ELECTRICAL HAZARD!

Misuse or failure to follow instructions properly may result in personal injury or death! CAUTION • There might be a risk of personal injury if this unit is misused or you fail to follow the instructions. DO NOT OPERATE THIS UNIT AROUND MOISTURE OR WATER: This may result in damage to equipment.

Never replace with any other fuse than 3 AMP SLOW BLOW! 250 VOLT! (2 AMP SLOW BLOW ON 220 VAC OPERATION)

NEVER REMOVE / INSERT AC LINE CORD WHEN THE UNIT IS ON. WARNING • NEVER ATTEMPT TO OPERATE THE AVIAN SERIES AMPLIFIER WITHOUT THE BOTTOM COVER ATTACHED - CONTACT WITH VOLTAGE INSIDE CAN BE FATAL!

### WATER AND MOISTURE

Do not use the unit near water such as a swimming pool, bathtub, wash bowl, sink, or in a damp environment like an incomplete basement or outside where it can come into contact with any moisture or rain.

### INSERTION OF FOREIGN OBJECTS

Do not push objects of any kind into the unit through openings as they could touch dangerous voltage points and short-out parts, possibly resulting in fire or electric shock. Avoid splashing or spilling any kind of liquid or solvents onto the unit. If liquid or any foreign object (I.E. paper clips, coins, staples) accidentally falls inside the unit, DISCONNECT FROM THE POWER SOURCE IMMEDIATELY and contact Raven Audio for instructions on how to proceed.

# WARRANTY

Raven Audio cannot warranty your product unless you keep it in its original shipping box, when transporting, moving, storing or otherwise removing it from your system for any reason. Warranty restrictions will apply if stored, shipped, or moved without putting the unit into its original shipping box. Please be certain to keep a copy of the original sales receipt from RAVEN AUDIO to validate the warranty if ever required. The warranty is for the original purchaser only and does not transfer to any subsequent owner.

### VOLTAGES

The design voltage in the USA is 120 VAC at 50/60Hz. (Foreign units 220/240 VAC at 50/60Hz.) For outside the USA distribution – these units will be specially wired for use with the country of destination. Power cables for that country will be included with the unit that will match the power receptacles for the residence or office or other destination chosen by the customer and discussed ahead of time with Raven Audio USA prior to sale.

### SERVICE

Any attempted repair or opening of the unit chassis by anyone not authorized by Raven Audio, will void the warranty of this unit. Call Raven Audio for service. Raven Audio contact information can be found at: <http://www.ravenaudio.com>